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US005868123A

**United States Patent** [19]**Hasegawa et al.**[11] **Patent Number:** **5,868,123**[45] **Date of Patent:** **Feb. 9, 1999**[54] **MAGNETIC CORE-COIL ASSEMBLY FOR SPARK IGNITION SYSTEMS**[75] Inventors: **Ryusuke Hasegawa**, Morristown; **John Silgailis**, Cedar Grove, both of N.J.;  
**Donald Grimes**, Findley, Ohio[73] Assignee: **AlliedSignal Inc.**, Morris Township, N.J.[21] Appl. No.: **672,909**[22] Filed: **Jun. 28, 1996****Related U.S. Application Data**

[60] Provisional application No. 60/004,815 Oct. 5, 1995.

[51] Int. Cl.<sup>6</sup> ..... **F02D 3/02**[52] U.S. Cl. .... **123/634**

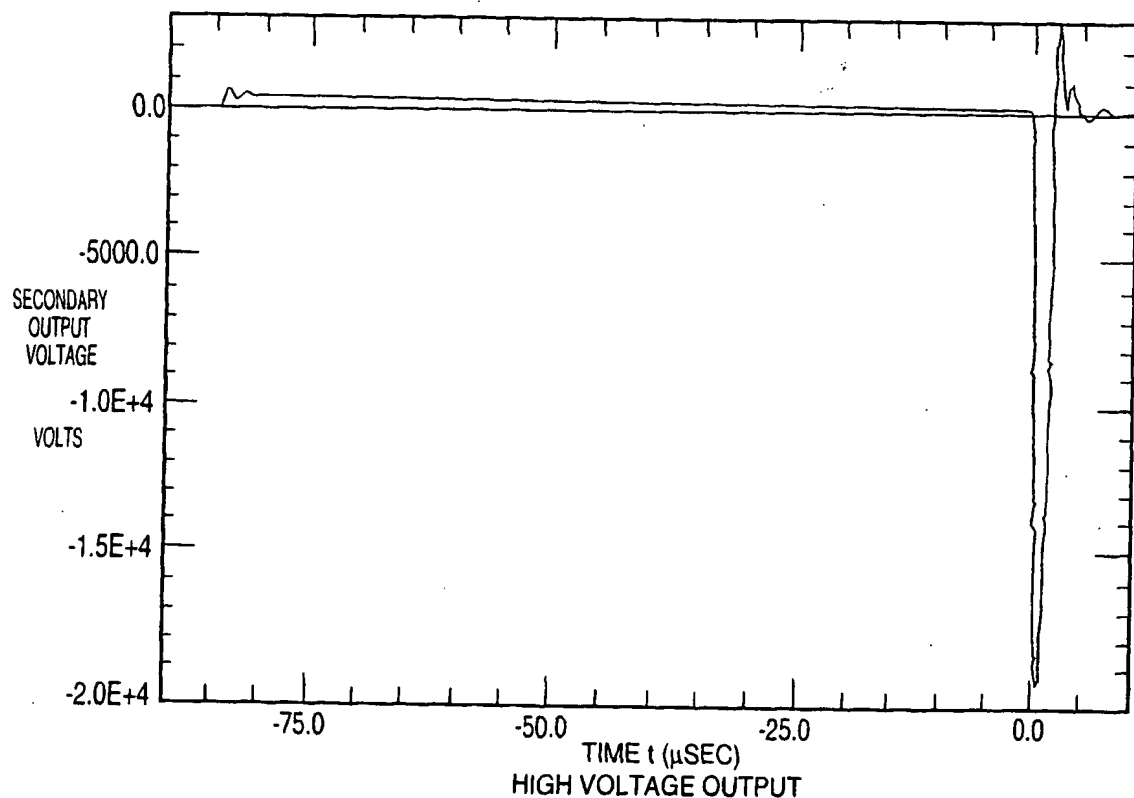
[58] Field of Search ..... 123/634, 635

[56] **References Cited****U.S. PATENT DOCUMENTS**

4,502,454	3/1985	Hamai et al.	123/634 X
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*Primary Examiner*—Tony M. Argenbright  
*Attorney, Agent, or Firm*—Ernest D. Buff[57] **ABSTRACT**

A magnetic core-coil assembly generates an ignition event in a spark ignition internal combustion system having at least one combustion chamber. The assembly comprises a magnetic core of amorphous metal having a primary coil for low voltage excitation and a secondary coil for a high voltage output to be fed to a spark plug. A high voltage is generated in the secondary coil within a short period of time following excitation thereof. The assembly senses spark ignition conditions in the combustion chamber to control the ignition event.

**7 Claims, 4 Drawing Sheets**

The  
United  
States  
of  
America



The Commissioner of  
Patents and Trademarks

*Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.*

Therefore, this

United States Patent

*Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.*

*If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.*

*If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to any statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extension.*

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